

PROTECTING OUR WATER SUPPLY AT THE WATERSHED LEVEL

A watershed is a topographically defined area of land (highest point) that contributes water through its springs, seeps, road ditches, gullies, marshes and streams to a body of water (lowest point). Canandaigua Lake is the lowest point in our area and receives water ranging from the northern end of the City of Canandaigua all the way down to the southern part of Naples- encompassing portions of 12 municipalities totaling 174 square miles (see map). Since water that lands within the watershed boundaries eventually ends up in Canandaigua Lake and ultimately your faucet; human activities occurring within the watershed directly influence the quality of water you drink. The cleaner the water in the lake is: the safer, easier and less expensive to treat.

By all regulatory standards, Canandaigua Lake is a high quality source of drinking water. This is not by chance. Although we have significant natural features that help to provide for a quality water supply such as significant forests and a deep lake; there are still numerous potential pollution threats within the watershed area that need to be actively managed and monitored. There are many examples of lakes that have been significantly polluted due to the lack of watershed protection activities. The municipalities, governmental agencies and citizen groups of this region did not want to see the same fate befall Canandaigua Lake.

Based on the existing and future threats to the lake, the 14 watershed and water purveying municipalities united in 1999 to comprehensively protect Canandaigua Lake for generations to come by forming the Canandaigua Lake Watershed Council. The Watershed Council, consisting of publicly elected representatives, coordinates the overall watershed protection effort through a Watershed Program Manager and by partnering with various county and state agencies to implement a comprehensive watershed protection program. The Watershed Council has been recognized as a model in intermunicipal and interagency cooperation by winning the US EPA Clean Water Partner for the 21st Century award and the first ever NY DEC Environmental Excellence Award.

Management efforts are focused on reducing pollution from various potential sources such as: existing and proposed residential development, agriculture, stormwater runoff from impervious areas, septic systems, hazardous materials, mining, stream and road bank erosion, timber harvesting and boating. The impact from each of these potential sources can be greatly reduced through good management activities.

The Watershed Council and its partners have implemented many projects and actions to reduce the impact from these potential sources. See: [www.canandaigualake.org](http://www.canandaigualake.org). The five water purveyors also employ a Watershed Inspector who primarily enforces septic system regulations. In addition, the agricultural community has stepped up to the call by partnering with our Soil and Water Districts and federal farm agencies to voluntarily implement substantial capital improvements to reduce their impact on the lake. Our citizen organizations such as The Canandaigua Lake Watershed Association and the Finger Lakes Land Trust have been very active in educational and land protection efforts. If you would like more information on the watershed program, please call our Watershed Manager at 396-3630.



Canandaigua Lake Watershed



City of  
Canandaigua  
Water Treatment Facility

Fed. ID #3401150

2013  
Water Quality Report

OUR MARK OF EXCELLENCE

Once again we are pleased to present to you our annual water quality report. We are proud to report that our system met all New York State standards in 2013. Our system did not violate a maximum contaminant level.

In April the water plant entered its drinking water into a competition held by the New York section of American Water Works Association. In this completion our water was judged to be the best tasting water in all of New York State.

One boil water advisory was issued in June of 2013 for a portion of Adelaide Avenue due to the damage of a sewer line when repairing a broken water main.

Over the years, we have dedicated ourselves to producing drinking water that meets or exceeds all state and federal drinking water standards. We accomplish this by continually striving to adopt new and better methods of delivering the best quality drinking water that we can. As regulations and drinking water standards change, it is our commitment to quickly incorporate these changes system wide in an expeditious and cost effective manner. If you have any health concerns relating to the information in this report, we encourage you to contact your health care provider. For more information about this report, or for any questions relating to your drinking water, please call Peter Virkler, Chief Operator, at 396-5064.

SPECIAL HEALTH INFORMATION

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immunocompromised persons such as those with cancer who are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/ AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/ CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

HOW HARD IS MY WATER?

On average, the hardness of the water delivered to your residence or place of business is 130 mg/L (parts per million) or 7.5 grains.

GOT QUESTIONS?

Call U.S. EPA's Safe Drinking Water  
Hotline at 1-800-426-4791

INFORMATION ON FLUORIDE ADDITION

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.7 to 1.2 mg/L (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. Throughout 2013, monitoring showed fluoride at levels in the optimal range 100% of the time other than for two weeks when fluoride was not added to the water to allow the facility to install new fluoride tanks. None of the monitoring results showed fluoride at levels that exceeded the 2.2 mg/L MCL for fluoride.

SUBSTANCES EXPECTED IN DRINKING WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants.

In order to ensure that tap water is safe to drink, the State and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.



INFORMATION ON THE INTERNET

The U.S. EPA Office of Water [www.epa.gov/watrhome](http://www.epa.gov/watrhome) and the Centers for Disease Control and Prevention [www.cdc.gov](http://www.cdc.gov) websites provide information on many issues related to water resources, water conservation, and public health. The Department of Health's website [www.health.state.ny.us](http://www.health.state.ny.us) provides complete and current information on water issues in our own state, including valuable information about our watershed.

# Canandaigua Water Plant 2013 Water Quality Report

## WHAT’S IN MY WATER?

In accordance with State regulations, the City of Canandaigua routinely monitors your drinking water for numerous contaminants. We test your drinking water for coliform bacteria, turbidity, inorganic contaminants, lead, copper, nitrate, volatile organic contaminants, total trihalomethanes and synthetic organic contaminants. The table presented below depicts which contaminants were detected in your drinking water. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Therefore some of the data, though representative of the water quality, is more than one year old.

REGULATED SUBSTANCES							
SUBSTANCE (UNITS)	DATE SAMPLED	MCL	MCLG	AVG AMT.	RANGE (LOW HIGH)	VIOLATION	TYPICAL SOURCE
Barium (ppm)	8/13	2	2	0.024	N/A	No	Discharge of drilling wastes, metal refineries; erosion of natural deposits
Nickel (ppb)	8/13	100	100	1.5	N/A	No	Erosion of natural deposits; discharge from stainless steel factories
Fluoride (ppm) <sup>1</sup>	2013	2.2	N/A	0.85	ND - 1.17	No	Erosion of natural deposits; water additive; discharge from aluminum and fertilizer factories
Nitrate (ppm)	5/13	10	10	0.23	N/A	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Chromium (ppb)	8/13	100	100	3.0	N/A	No	Erosion of natural deposits; discharge from stainless steel factories
Strontium (ppb)	2013	N/A	N/A	111	107-120	No	Naturally present in the environment
Total Coliform <sup>5</sup>	2013	2 pos. samples	0	1	N/A	No	Naturally present in the environment
Turbidity Combine Filter Effluent (NTU) <sup>2</sup>	2013	TT=0.3	N/A	0.26 max	0.02- 26	No	Soil runoff
Turbidity Individual Filter (NTU)	2013	TT<=1	N/A	0.46 max	0.02- 46	No	Soil runoff
Alkalinity (ppm)	2013	N/A	N/A	114	108-118	No	Naturally present in the environment
Total Organic Carbon (ppm)	2013	N/A	N/A	2.6	2.3-3.1	No	Naturally present in the environment
Dissolved Organic Carbon (ppm)	2013	N/A	N/A	2.5	2.3-2.7	No	Naturally present in the environment
UV254 (cm <sup>-1</sup> )	2013	N/A	N/A	0.0255	0.0202- .0292	No	
Specific Ultraviolet Absorbance (L/mg-m)	2013	N/A	2	1.04	0.81-1.22	No	

STAGE I							
Total Haloacetic Acids (ppb)	2013	60	N/A	30 <sup>6</sup>	23-50	No	By products of drinking water chlorination
Total Trihalomethanes (ppb)	2013	80	N/A	63 <sup>6</sup>	43-100	No	By products of drinking water chlorination

STAGE II							
Total Haloacetic Acids (ppb)	11/13	60	N/A	30 <sup>7</sup>	26-30	No	By products of drinking water chlorination
Total Trihalomethanes (ppb)	11/13	80	N/A	65 <sup>7</sup>	59-65	No	By products of drinking water chlorination
Radiological							
Gross Alpha (pCi/L)	12/13	15	0	ND	N/A	No	Erosion of natural deposits
Radium 226 (pCi/L)	2/13	5	0	ND	N/A	No	Erosion of natural deposits
Radium 228 (pCi/L)	2/13	5	0	0.4	0.4	No	Erosion of natural deposits

LEAD & COPPER							
SUBSTANCE (UNITS)	DATE SAMPLED	AL	MCLG	90TH PERCENTILE	RANGE (LOW HIGH)	VIOLATION	TYPICAL SOURCE
Copper (ppm)	6/11	1.3	N/A	0.022 <sup>3</sup>	0.012-.058	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	6/11	15	N/A	1.8 <sup>3</sup>	<1-2.8	0 <sup>4</sup> -No	Corrosion of household plumbing systems; Erosion of natural deposits

<sup>1</sup> FLUORIDE IS ADDED TO THE WATER SUPPLY TO HELP PROMOTE STRONG TEETH. THE DEPARTMENT OF PUBLIC HEALTH RECOMMENDS AN OPTIMAL FLUORIDE CONCENTRATION RANGE OF 0.7 PPM TO 1.2 PPM. MEASURED ON LABRATORY’S FINISHED WATER.

<sup>2</sup> TURBIDITY IS A MEASURE OF THE CLOUDINESS OF THE WATER, AND IS MONITORED AS AN INDICATOR OF THE EFFECTIVENESS OF OUR FILTRATION SYSTEM. THE TURBIDITY RULE REQUIRES THAT 95% OR MORE OF MONTHLY SAMPLES BE BELOW 0.3 NTUS.

<sup>3</sup> THE LEVEL PRESENTED REPRESENTS THE 90TH PERCENTILE. A PERCENTILE IS A VALUE ON A SCALE OF 100 THAT INDICATES THE PERCENT OF A DISTRIBUTION THAT IS EQUAL TO OR BELOW IT. THE 90TH PERCENTILE IS EQUAL TO OR GREATER THAN 90% OF THE LEAD AND COPPER VALUES DETECTED AT YOUR WATER SYSTEM.

<sup>4</sup> NUMBER OF HOMES OUT OF 30 THAT WERE ABOVE THE ACTION LEVEL.

<sup>5</sup> COLIFORMS ARE BACTERIA THAT ARE NATURALLY PRESENT IN THE ENVIRONMENT AND ARE USED AS AN INDICATOR THAT OTHER, POTENTIALLY HARMFUL BACTERIA MAY BE PRESENT.

<sup>6</sup> THIS LEVEL REPRESENTS THE ANNUAL COMPOSITE AVERAGE.

<sup>7</sup> STAGE II TESTING WAS BEGUN IN OCTOBER 2013. THM & HAAs ARE NOW REPORTED AS LRAA (LOCATIONAL RUNNING ANNUAL AVERAGE).

**LEAD:** INFANTS AND YOUNG CHILDREN ARE TYPICALLY MORE VULNERABLE TO LEAD IN DRINKING WATER THAN THE GENERAL POPULATION. IT IS POSSIBLE THAT LEAD LEVELS AT YOUR HOME MAY BE HIGHER THAN AT OTHER HOMES IN THE COMMUNITY AS A RESULT OF MATERIALS USED IN YOUR HOME’S PLUMBING. IF YOU ARE CONCERNED ABOUT ELEVATED LEAD LEVELS IN YOUR HOME’S WATER, YOU MAY WISH TO HAVE YOUR WATER TESTED AND FLUSH YOUR TAP FOR 30 SECONDS TO 2 MINUTES BEFORE USING YOUR TAP WATER. ADDITIONAL INFORMATION IS AVAILABLE FROM THE SAFE DRINKING WATER HOTLINE (800-426-4791).

## WHERE DOES MY WATER COME FROM?

The Canandaigua Water Treatment Plant draws water from Canandaigua Lake as its sole source. In 2013, the Facility withdrew 1.315 billion gallons of water from the lake and produced 1.283 billion gallons of water for distribution. The balance was used for backwashing and internally within the water plant. Of the distribution amount, approximately 388 million gallons were metered and sold to the 11,300 residents of the City of Canandaigua at a cost of \$3.07/1000 gallons. The City also sold and metered 798 million gallons of water to the Towns of Canandaigua, Farmington, and Hopewell. This leaves a total of 97 million gallons or 7.6% of water produced which went unmetered. This is the amount of water used for firefighting purposes, hydrant flushing, distribution leaks and old, inaccurate meters yet to be replaced.

## HOW IS MY WATER TREATED AND PURIFIED?

Canandaigua Lake water is drawn into the plant through an intake pipe which is submerged approximately 45 feet below the surface of the lake. The intake pipe is located 500 feet from the shoreline to lessen the effects of storm water runoff. Chlorine is added at the intake to prevent zebra mussels from colonizing the interior of the pipe and also to control the growth of bacteria and algae.

The lake water is then pumped up to the rapid mix chamber in the process building. Here a coagulant, polyaluminum chloride, is added. This starts the process of coagulation where the coagulant comes into contact with any particles in the water for eventual removal by settling. Granular activated carbon can be added at this point to control taste and odor issues within the water. The water then goes into a series of basins for a process known as flocculation. This process of gentle agitation causes particles present in the water to agglomerate and form larger and heavier particles known as floc.

By the time the water moves into the settling basins, the formed floc is heavy enough to settle out to the bottom of the tank for removal. The settled waste is periodically drawn off to a holding tank and eventually discarded. After the settling basins, the water is directed to the rapid sand filters. A mixed media filtration system consisting of anthracite coal, sand and garnet filter out any remaining particles.

After water has passed through the filters a final dose of disinfecting chlorine is added. Also added are sodium hydroxide, to balance the pH and prevent corrosion in the distribution system, and a measured quantity of fluoride.

To ensure excellent water quality, water samples are taken regularly and at various stages of the treatment process. These samples are tested for various water quality parameters in New York State certified laboratories. Routine tests are also performed on samples taken in the distribution system on a regular basis.

## SOURCE WATER ASSESSMENT

New York State has completed the Source Water Assessment for Canandaigua Lake and found a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa, phosphorus, DBP precursors, and pesticides contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: hazardous waste sites, chemical bulk storage, landfills, mines, RCRA and TRI.

Further information on the source water assessment of our community water supply is available on the U.S. Geological Survey (USGS) website at ny.water.usgs.gov.

## TABLE DEFINITIONS

**Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

**Maximum Amount Detected:** This column represents an average of sample result data collected during the reporting year. In some cases, it may represent a single sample if only one sample was collected.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as possible.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**N/A:** Not applicable

**ND:** Not detectable at testing limits.

**Nephelometric Turbidity Units (NTU):** Measure of the clarity, or turbidity, of water.

**Parts per Billion:** One part of liquid in one billion parts of liquid (or microgram per liter).

**Parts per Million:** One part of liquid in one million parts of liquid (or milligram per liter).

**Range (Low – High):** This column represents a range of individual sample results, from lowest to highest, that were collected during the reporting year.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Picocuries per Liter (pCi/L):** Picocuries per liter is a measure of radioactivity in water.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

## WATER CONSERVATION TIPS

Conservation is an important first step in preserving our water supply. Using these measures can also save you money by reducing your water and sewer bills. Here are a few suggestions.

### Conservation measures you can use inside your home:

- Fix leaking faucets, pipes and toilets.
- Install water saving devices in faucets, toilets and appliances
- Replace high water use fixtures.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Run the dishwasher only when full.

## YOU CAN CONSERVE OUTDOORS AS WELL:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water saving nozzles and sprinkler heads.
- Use water from a bucket to wash your car and save the hose for rinsing.

## COMMUNITY PARTICIPATION

You are invited to participate in our public forum and voice your concerns about your drinking water. The City Council meets the first Thursday of each month at 2 North Main Street, Canandaigua. Council meetings begin at 7:00 pm.

**GOT QUESTIONS?**  
**Call New York State Dept. of Health:**  
**Geneva District Office: 315-789-3030**